

**BROADCAST EDUCATIONAL MEDIA COMMISSION
OHIO EDUCATIONAL TELEVISION/OHIO PUBLIC RADIO
PRIORITY 1 JOINT CAPITAL REQUEST**

Submitting Operation: Ohio Educational Television Stations and Ohio Public Radio
on behalf of their participating member organizations¹

Project Title: REQUIRED CRITICAL EQUIPMENT REPLACEMENT AND TECHNOLOGY
UPGRADES

Biennium for Submission: FY 23-24

Priority for Submission: 1 of 1

Project Description:

The Ohio Educational Television Stations and Ohio Public Radio Stations are jointly requesting state capital funding to assist the organizations in replacing critical broadcast equipment at or beyond end-of-life status with upgraded systems and technology. The components included in this request are essential to the stations in continuing to provide broadcast services to the public in their areas of the state to maintain universal access, while remaining prepared to act when faced with unanticipated local and statewide emergency needs. In all cases, the purchases will represent an investment in upgraded and forward-looking technology and put the organizations in the position to respond to the continuing evolution in broadcast standards.

To underscore the importance and high priority of these requests for their continued operation, the stations have agreed to provide 50% of the cost of each individual project included in this package as a local match.

The needs are critical and immediate due the age or documented failures of existing systems that are past repair and based on obsolete, end-of-life technology that no longer meets current requirements or addresses future needs. In many cases, the requests reflect the absence or loss of backup equipment for immediate needs, ignoring best practice standards that permit maintenance on primary systems to avoid predictable failures that results in service disruptions. For some of these stations, there is no remaining margin of error to avoid loss of service to their communities.

The requests range from replacements for obsolete and unreliable transmitters, studio-transmitter communication systems rendered unusable by the sunseting of T-1 telephone circuits, to outdated and failing camera, switching, control and editing systems incompatible with new technology standards. They impact content acquisition and creation, storage, internal routing, and final broadcast and digital delivery of services to the public. To clarify, because of the rate of technologic change, we assume that any new technology purchase will be an upgrade over that currently in service, but we have made efforts to specify how that consideration will affect future use.

Previous capital appropriations have assisted the broadcast organizations in allowing them to continue to stand ready to serve the needs of the public and state government. Our objective is to build on the state's past infrastructure investments that allowed us to create, obtain and deliver programming and education services during the health crisis. However, we continue to stress that these resources require periodic updates and replacement to remain in line with both current and changing needs in technology as well as unanticipated crises in public health and public safety.

¹ PBS Western Reserve, WYSO, WCBE and WCSU have chosen not to participate.

While each organization prioritizes its own purchases based on the urgency of the need and the availability of local funding, our goal is for all stations to operate on essentially comparable technology platforms and support equity in the content and services provided to all Ohioans for universal service. By doing so, we will be able to move forward to serve all Ohioans when new opportunities become available. Accordingly, projects are based on maintaining current services over the next two years while also standardizing the station capabilities required to implement the use of emerging technologies to benefit the state over the next five to ten years.

The well-publicized debut of ATSC 3.0 broadcasting (NextGenTV) across the nation is driving interest in the new FCC-approved technology standard, but it remains a market-driven technology waiting for the development of applications that are being influenced by business considerations. There is no set equipment package for a comprehensive transition to 3.0, so the Ohio PBS stations requests focus on that technology we do know will be a part of the new standard's capabilities, such as 4K Ultra-High-Definition video, single frequency networks and other systems that are ready for 3.0 upgrades when the time is appropriate.

Radio is looking at its own set of innovations, but replacement of transmitters and analog systems that can no longer be repaired are their highest priority in maintaining service and reaching the public.

Justification for this project:

Under the umbrella of our shared public service mission, Ohio's educational Radio and TV stations face the challenges of both anticipating the needs of the future at the same time we are dealing with the realities of continuing to produce and present programming and support public safety needs while simply staying on the air as our infrastructure systems continue to age.

It is critical for stations to be prepared and technically capable to respond to situations that no one can anticipate in advance. The pandemic and the variety of ways it has changed life in Ohio have demonstrated to everyone how important it is to be ready for the unexpected. By all accounts, we have provided a shining demonstration of how valuable ongoing state investments in our infrastructure systems have been in allowing public television and radio stations to respond to the greatest public health crisis in a century. Our interconnected web of communication not only allowed The Ohio Channel (OGT) and the Statehouse News Bureau to capture events in real-time but was in place and ready for TV and radio stations to deliver that information to the public.

Our record of success extends to public safety and public service. In 2016, Ohio's Public Television Stations partnered with the Ohio Emergency Management Agency (Ohio EMA) and the Broadcast Educational Media Commission (BEMC) to create the first-in-the -nation Ohio (Digital) Emergency Alerting System (OEAS). OEAS embeds emergency alerts and information in public TV signals for transport to all broadcasters and entities that distribute it to the public. The value of our system was once again demonstrated in the summer of 2021 when the FEMA system for distributing Amber Alerts was out of service, but OEAS guaranteed that the information went out to broadcasters statewide and the child was found.

Planning made these services possible. But as the technology revolution continues to gain speed at an ever-increasing rate and we look ahead to ensure that we can maintain our readiness today and tomorrow, the choices we make also need to strengthen our infrastructure and mitigate our long-term costs.

Even more important than the move to embrace new technology is the critical need to maintain our existing daily service. A majority of the items included in this joint request are replacements for

equipment that is simply broken, out-of-date, or considered well past end-of-life and repair is not supported by the manufacturer. Parts are expensive if they can even be found. In the case of the radio stations, the failing transmitter systems were funded by now-extinct federal programs and are reaching the end of their usable lives.

While stations can be commended for finding innovative ways to extend the life of their existing systems, it is at a cost. The repair time required to repair older equipment escalates as its age increases while any reserve units have been forced into service or cannibalized for parts. With no backups available, preventive maintenance is a luxury because it means taking the station out of service, the same result as when a key system fails.

In some requests, stations are asking for equipment to provide or restore redundancy by allowing aging system to be repurposed into a backup role.

Ohio's public broadcasting organizations have embraced the challenge of providing quality programming and educational and safety services to the citizens of our state, but the system is structured so that money spent on technology needs often comes at the expense of the budgets devoted to those services. Rather than attempt to judge relative merits of another's needs, the participating stations have worked together to address our most critical issues in a joint request that will allow us to replace and upgrade equipment and technology systems to guarantee their availability to the public and the state at the times when they are needed the most, today and tomorrow.

Component Package and Cost:

Joint Television & Radio Equipment Replacement and Upgrade Package: (see detail below)	\$ 4,183,166
50% Station Match:	\$ 2,091,583
Total request to state for Priority 1 items:	\$ 2,091,583

FY 23-24 JOINT RADIO-TV CAPITAL REQUEST

PBS Western Reserve, WYSO, WCBE and WCSU chose not to request funds

Total Estimated Costs as of 2021	50% State Funding Requested
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TELEVISION

BOWLING GREEN STATE UNIVERSITY - WBGU PBS, Bowling Green

Package 1	LED Studio Lighting Upgrades	\$ 65,000	\$ 32,500
Comments	Existing control old & failing, incandescent lights old & inefficient, new LED for 4K		
Package 2	Ultra High-Definition Studio Cameras and Control System Upgrades	\$ 115,000	\$ 57,500
Comments	First generation HD cameras systems obsolete, repair issues, new will be 4K		

WBGU PBS - Bowling Green State University - Total State Request: \$ 90,000

GREATER CINCINNATI EDUCATIONAL TELEVISION FOUNDATION - CET - WCET & WPTO, Cincinnati

Package 1	Replacement and Upgrade of Obsolete Production Graphics System	\$ 47,896	\$ 23,948
Comments	Existing is end of life and no longer supported, parts issues, new is 4K		
Package 2	Production Switcher Replacement and Upgrade	\$ 150,640	\$ 75,320
Comments	Existing switcher end of life, no longer supported, only used parts. new is 4K		
Package 3	Production Server Replacement and Upgrade to New Technology	\$ 207,654	\$ 103,827
Comments	Parts of server end of life, parts from secondary market, new supports 4K use		

WCET & WPTO - Greater Cincinnati Educational Television Foundation - Total State Request: \$ 203,095

PUBLIC BROADCASTING FOUNDATION OF NW OHIO - WGTE Public Media - WGTE-TV, Toledo

Package 1	Replace and Upgrade WGTE-TV Transmitter, Control and Monitoring System	\$ 287,000	\$ 143,500
Comments	Obsolete, 20 yrs old, no parts or backup units, new will be ATSC 3.0 capable		
Package 2	Replace and Upgrade WGTE-TV Studio-Transmitter Link System	\$ 75,000	\$ 37,500
Comments	Current is 20 yrs old, cannot obtain used parts, partial T-1 based, new will be all-digital IP tech		
Package 3	Replace and Upgrade Embedded Program and System Information Encoder (PSIP)	\$ 19,000	\$ 9,500
Comments	Current system only minimally functional, no backup, new will be IP-based		

WGTE-TV - WGTE Public Media - Total State Request: \$ 190,500

GREATER DAYTON PUBLIC TELEVISION INC. - THINKTV - WPTD-TV, Dayton

Package 1	Replacement and Upgrade of Obsolete Production Graphics System	\$ 50,000	\$ 25,000
Comments	Current is 12+ yrs old technology obsolete, no parts, new will be 4K		
Package 2	Replacement and Upgrade of Obsolete STL Microwave system	\$ 50,000	\$ 25,000
Comments	Current 20+ yrs old, mfg not in business, no parts, new capacity needed for 4K		
Package 3	Studio Lighting and Control Systems Replacement and Upgrade	\$ 250,000	\$ 125,000
Comments	Current dates back to 1960s, only partial functional, asbestos problem, replace with LED		

WPTD-TV - ThinkTV - Total State Request: \$ 175,000

THE OHIO STATE UNIVERSITY - WOSU PUBLIC MEDIA - WOSU-TV, Columbus

Package 1	TV Production Cameras and Edit Suite Upgrades	\$ 101,812	\$ 50,906
Comments	15 yr old cameras failing, replace with 4K capable, edit computers obsolete for UHD		

WOSU-TV - WOSU Public Media - Total State Request: \$ 50,906

OHIO UNIVERSITY - WOUB PUBLIC MEDIA - WOUB-TV, Athens & WOUC-TV, Cambridge

Package 1	TV Production Suite 4K Modernization Package	\$ 517,088	\$ 258,544
Comments	First-generation digital equipment is aging, maintenance issues, not capable of UHD/4K video		
Package 2	Upgrade to IP-based 4K Digital Routing Switcher	\$ 135,353	\$ 67,677
Comments	First-generation digital equipment aging, is SDI/HD, not capable of UHD/4K		

WOUB-TV & WOUC-TV - WOUB Public Media State Request Total: \$ 326,221

IDEASTREAM PUBLIC MEDIA - WVIZ-TV, Cleveland

Package 1	Replace obsolete Studio Camera Systems with new technology	\$ 502,000	\$ 251,000
Comments	Current end of life & not supported, new will be UHD 4K ready		

WVIZ-TV - Ideastream Public Media - Total State Request: \$ 251,000

TELEVISION TOTALS \$ 2,573,443 \$ 1,286,722

RADIO**CINCINNATI PUBLIC RADIO INC. - WGUC & WVXU, Cincinnati; WMUB, Oxford**

Package 1	Replacement and Upgrade of Radio Talk Studio Audio Console	\$ 23,900	\$ 11,950
Comments	Existing is ageing and costly to maintain, incompatible with other studios		
Package 2	Replacement Remote News Reporting Kit for Upgrade to IP Digital Audio	\$ 4,908	\$ 2,454
Comments	Current is aging & high maintenance; IP upgrade will allow content transfer by Cell/WiFi/internet		
Package 3	Test Equipment for Digital Audio Analysis	\$ 5,842	\$ 2,921
Comments	New audio systems are IP based, equipment required to diagnose problems		

WGUC & WVXU - Cincinnati Public Media - Total State Request: \$ 17,325

DAYTON PUBLIC RADIO INC. - WDRP-FM, Dayton & WDPG-FM, Greenville

Package 1	Replace and Upgrade Audio Consoles & Routing Switcher to Audio over IP	\$ 120,800	\$ 60,400
Comments	Existing analog equip. 20 years old, upgrading to Audio over IP		
Package 2	Replace Defective WDPG Directional Antenna System	\$ 140,000	\$ 70,000
Comments	Existing antenna is damaged and out of FCC compliance, on reduced power		
Package 3	Replace T-1 Studio-Transmitter-Links with fiber	\$ 70,000	\$ 35,000
Comments	AT&T retiring current T-1 phone line connections, microwave not an option due to location		

WDRP-FM & WDPG-FM - Dayton Public Radio - Total State Request: \$ 165,400

PUBLIC BROADCASTING FOUNDATION OF NW OHIO - WGTE PUBLIC MEDIA - WGTE-FM, Toledo

Package 1	Replacement of WGTE-FM Broadcast Transmitter System	\$ 106,400	\$ 53,200
Comments	Current is 25 years old, past end of life, has taken station off air for days		
Package 2	Replacement & Upgrade of Radio Automation and Playout Systems	\$ 28,600	\$ 14,300
Comments	Existing is primitive, history of failures, new will provide automatic switchover		
Package 3	Replacement & Upgrade of On Air Audio Processing Systems	\$ 16,000	\$ 8,000
Comments	Current systems are 21-27 years old, obsolete to deal with digital audio range		

WGTE-FM - WGTE Public Media - Total State Request: \$ 75,500

KENT STATE UNIVERSITY - WKSU-FM, Kent & 6 others

Package 1	WKRJ Transmitter Replacement & Upgrade	\$ 91,676	\$ 45,838
Comments	Current transmitter defective, suffering multiple failures & downtime		
Package 2	WNRK Transmitter Replacement & Upgrade	\$ 91,676	\$ 45,838
Comments	Antiquated transmitter is 18 yrs old, beyond end of life, maintenance problems		

WKSU-FM - Kent State University - Total State Request: \$ 91,676

THE OHIO STATE UNIVERSITY - WOSU PUBLIC MEDIA - WOSU-FM & WOSA-FM, Columbus and 5 others

<i>Package 1</i>	Replacement and Upgrade of Seven Radio STL Systems	\$ 118,000	\$ 59,000
<i>Comments</i>	Existing microwave STLs not bi-directional, T-1 links being retired by AT&T		

WOSU/WOSA-FM - WOSU Public Media - Total State Request: \$ 59,000

OHIO UNIVERSITY - WOUB PUBLIC MEDIA - WOUB AM/FM, Athens and 3 others

<i>Package 1</i>	WOUC-FM Transmitter and Associated Equipment Replacement	\$ 88,350	\$ 44,175
<i>Comments</i>	Current transmitter purchased in 1987, failing, no parts or support, uses vacuum tubes		

<i>Package 2</i>	On-air/Production Analog Studio Replacement and Digital Upgrade	\$ 64,000	\$ 32,000
<i>Comments</i>	Existing studio constructed 1981, obsolete technology, upgrade to digital		

WOUB AM/FM - WOUB Public Media - Total State Request: \$ 76,175

MIAMI VALLEY PUBLIC MEDIA, INC. - WYSO Public Media - WYSO-FM, Yellow Springs

<i>Package 1</i>	Replace and Upgrade Audio Consoles & Routing Switcher to Audio over IP	\$ 268,070	\$ 134,035
<i>Comments</i>	Existing analog 20+ years old, failing, digital upgrade at new building		

<i>Package 2</i>	Replace and Upgrade Radio Automation System	\$ 121,500	\$ 60,750
<i>Comments</i>	Existing is 10+ yrs old, failing, cannot be upgraded, upgrade for new building		

<i>Package 3</i>	Studio Transmitter Link Microwave Tower for New Facility	\$ 140,000	\$ 70,000
<i>Comments</i>	Needed for new building, moving existing from current location takes station off-the-air		

WYSO-FM - WYSO Public Media - Total State Request: \$ 264,785

IDEASTREAM PUBLIC MEDIA - WCPN & WCLV, Cleveland

<i>Package 1</i>	Replace obsolete WCPN Studio Audio Mixers	\$ 110,000	\$ 55,000
<i>Comments</i>	Existing systems end of life, failing, not compatible with other audio systems		

WCPN & WCLV-FM - Ideastream Public Media - Total State Request: \$ 55,000

RADIO TOTALS \$ 1,609,722 \$ 804,861

Total of Radio and TV Project Requests to the state: \$ 2,091,583